



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

THE CRYSTALLOGRAPHY OF BUTTER AND OTHER FATS.

BY THOMAS TAYLOR, M.D., Microscopist U. S. Department of
Agriculture, Washington, D. C.

PLATES I. AND II.

CRYSTALLINE FORMATIONS OF BUTTER AND FATS.

- FIGS. 1, 2, 3 and 4. Represent primary crystals of butter, $\times 80$ to 110 .
FIGS. 5 and 6. Secondary crystals forming within primary crystals.
FIGS. 7 and 8. Secondary crystals which have separated from the primary forms. $\times 80$ to 110 .
FIGS. 9, 10 and 11. Tertiary crystals of butter. $\times 80$ to 140 .
FIG. 12. Tertiary passing into the amorphous. $\times 140$.
FIGS. 13, 14, 15 and 16. Represent oleomargarine. $\times 80$ to 110 .
FIG. 17. Oleo, $\times 140$. This crystal is not found in unboiled oleomargarine.
FIG. 18. Oleo in its second stage, as seen in oleomargarine as sold.
FIGS. 19 and 20. Common lard. $\times 140$ to 400 .
FIGS. 21, 22, 23 and 24. Crystals of beef-fat from various tissues of the ox. (Omentum, kidney, marrow of the femur, and round.)

PLATE III.

CRYSTALLINE FORMATIONS OF BUTTER.

- FIGS. 1, 2, 3, 6, 8, 9, 12 and 14. Primary crystals of normal butter. $\times 80$ to 110 .
FIGS. 4, 7 and 10. Primary crystals showing "secondaries" forming.
FIGS. 13 and 15. Secondary crystals of butter. $\times 80$ to 140 .
FIGS. 5 and 11. Tertiary crystals of butter. $\times 80$ to 140 .

PLATE IV.

CRYSTALLINE FORMATIONS OF OLEO AND BUTTER.

- FIGS. 1, 2, 4 and 11. Crystals of boiled oleo (Armour). $\times 70$ to 140 .
FIGS. 3, 5, 6, 7, 8 and 9. Crystals of boiled oleo in process of decay.
Such forms are frequently observed in oleomargarine.
 $\times 140$.
FIG. 10. The butter crystal as photographed by Detmers.
FIG. 12. A crystal of oleo and lard made by Prof. Weber, which he says
cannot be distinguished from that of pure butter. (See
Figs. 10 and 14.)
FIGS. 13 and 15. Crystals of boiled butterine as prepared by Prof.
Weber and photographed by Prof. Detmers, repre-
senting the butter crystal according to Prof. Weber.
FIG. 14. The true butter crystal, photographed by the late Dr. Bernard
Persh. Compare this plate with the transition stages
of butter crystals, Plate I.

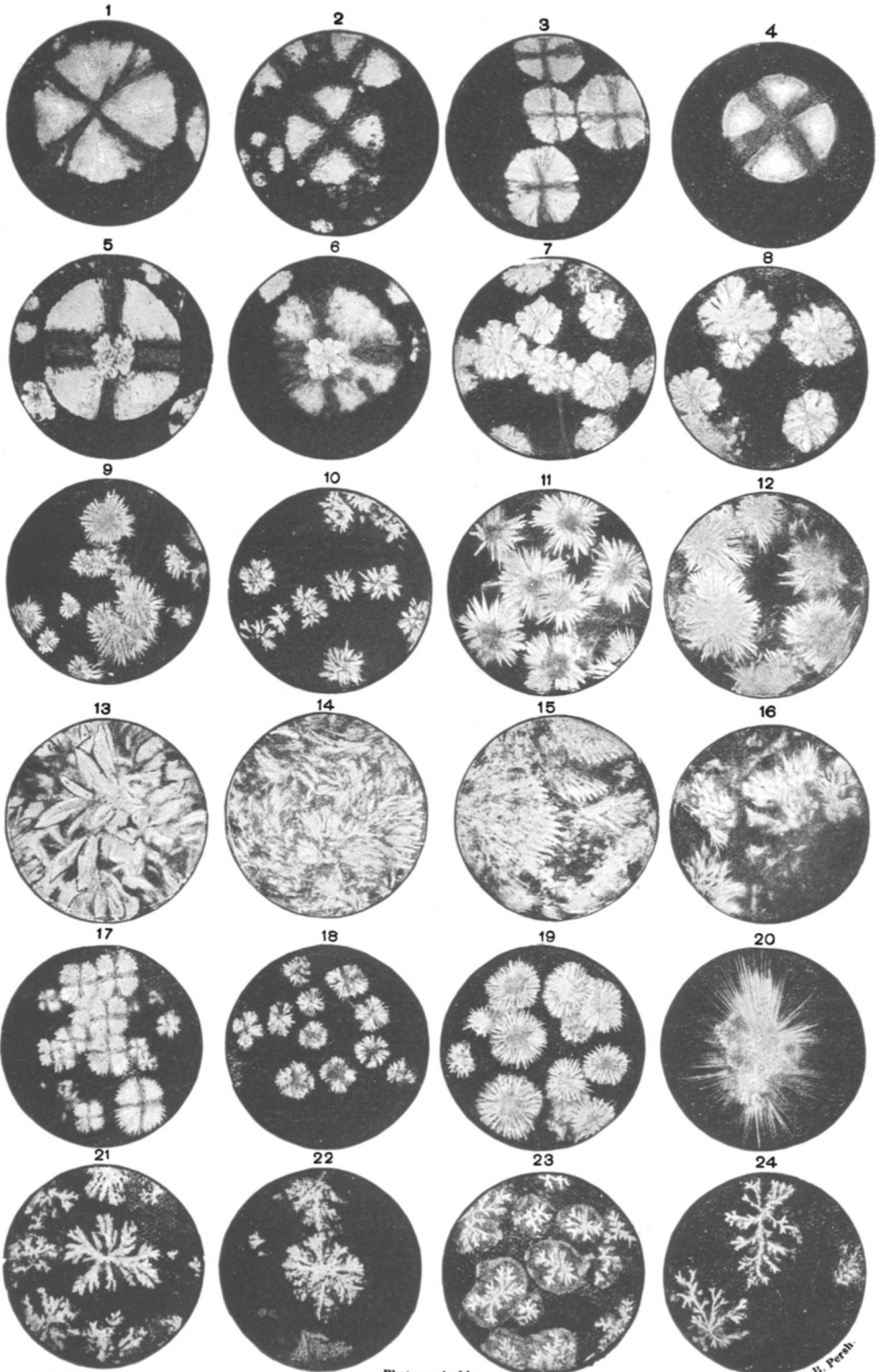
PLATE V.

CRYSTALLINE FORMATIONS OF OLEO AND OLEO-
MARGARINE.

- FIG. 1. Boiled oleo by plain light, exhibiting spines. $\times 140$.
FIG. 3. Boiled oleo by polarized light, showing a cross. $\times 140$.
FIGS. 2, 4, 5, 6, 9, 11, 12, 13, 14 and 15. General appearance of oleomar-
garine as sold in the market. $\times 75$ to 110 .
FIG. 7. Armour's oleomargarine boiled and cooled. $\times 140$.
FIG. 10. A specimen of oleomargarine composed mostly of stearine and
cottonseed oil. $\times 110$.
FIG. 8. Boiled butterine (Armour's make), showing the oleo crystals.

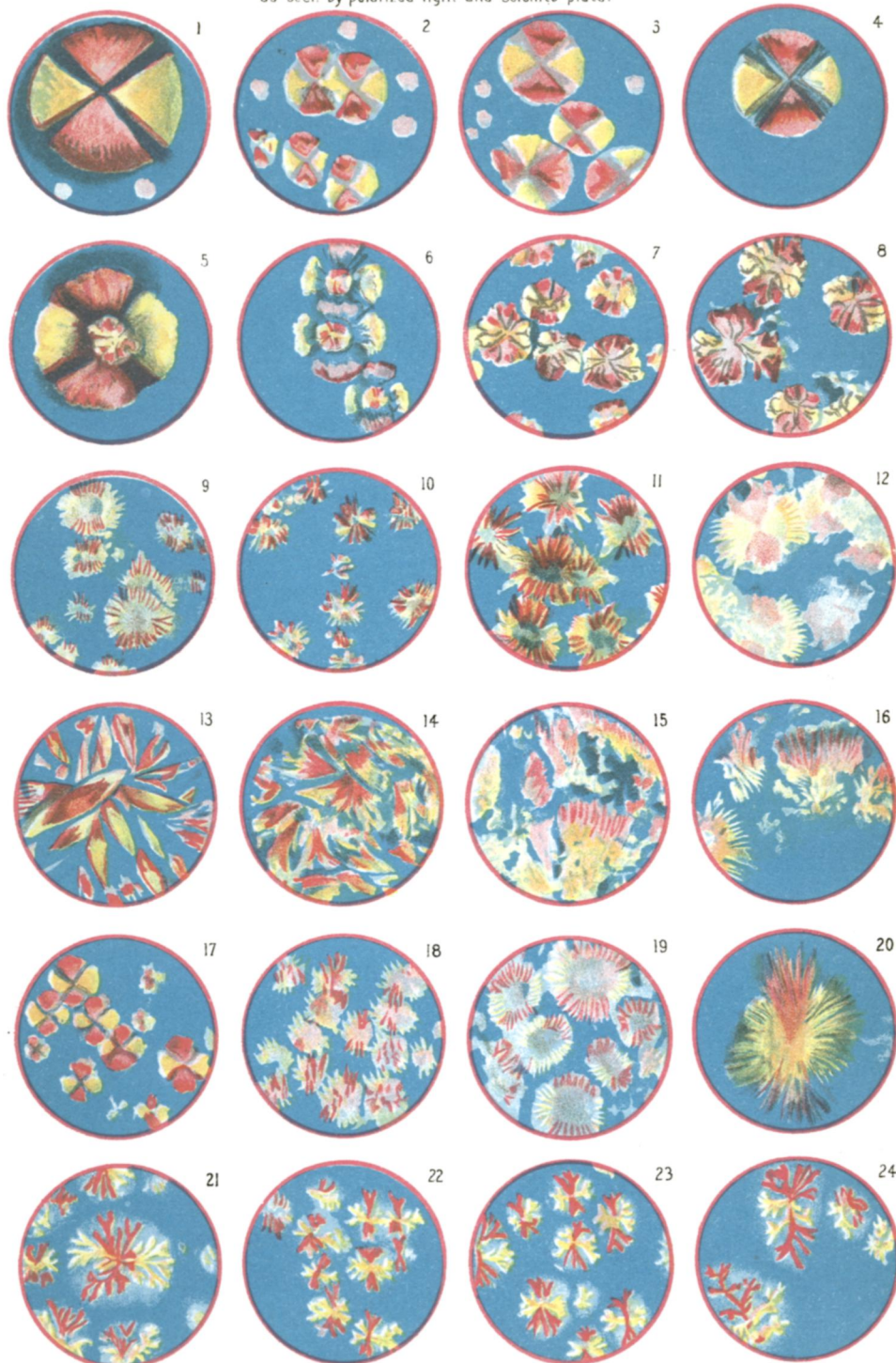
The above crystals were all photographed by polarized light, except
in the case of Fig. 1, which was by plain light.

CRYSTALLINE FORMATIONS OF BUTTER AND FATS.

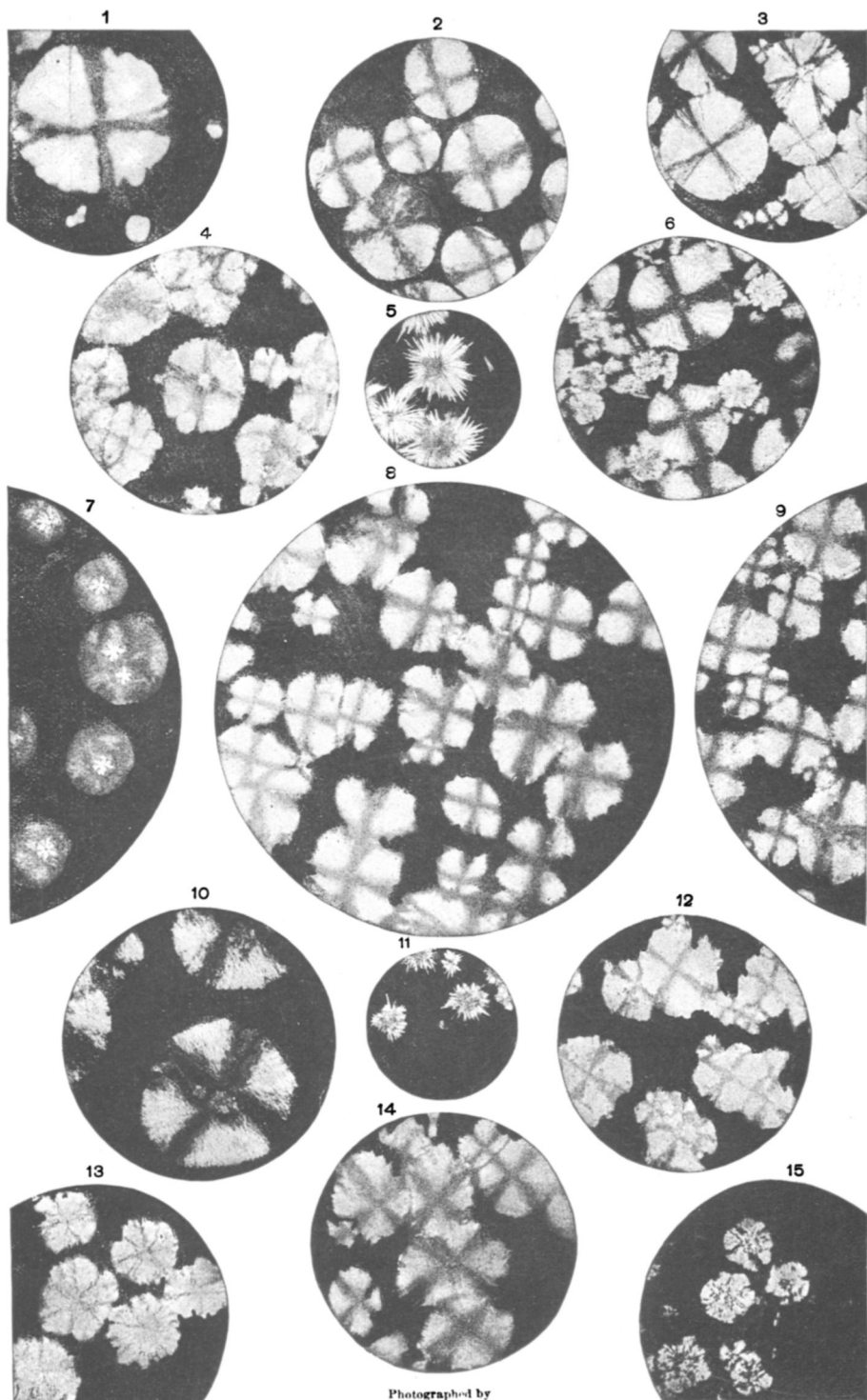


CRYSTALLINE FORMATION OF BUTTER AND FAT.

as seen by polarized light and selenite plate.



CRYSTALLINE FORMATIONS OF BUTTER.



Photographed by

Persh, Walmsley and Gascoyne

PLATE IV.

CRYSTALLINE FORMATIONS OF "OLEO" & BUTTER.

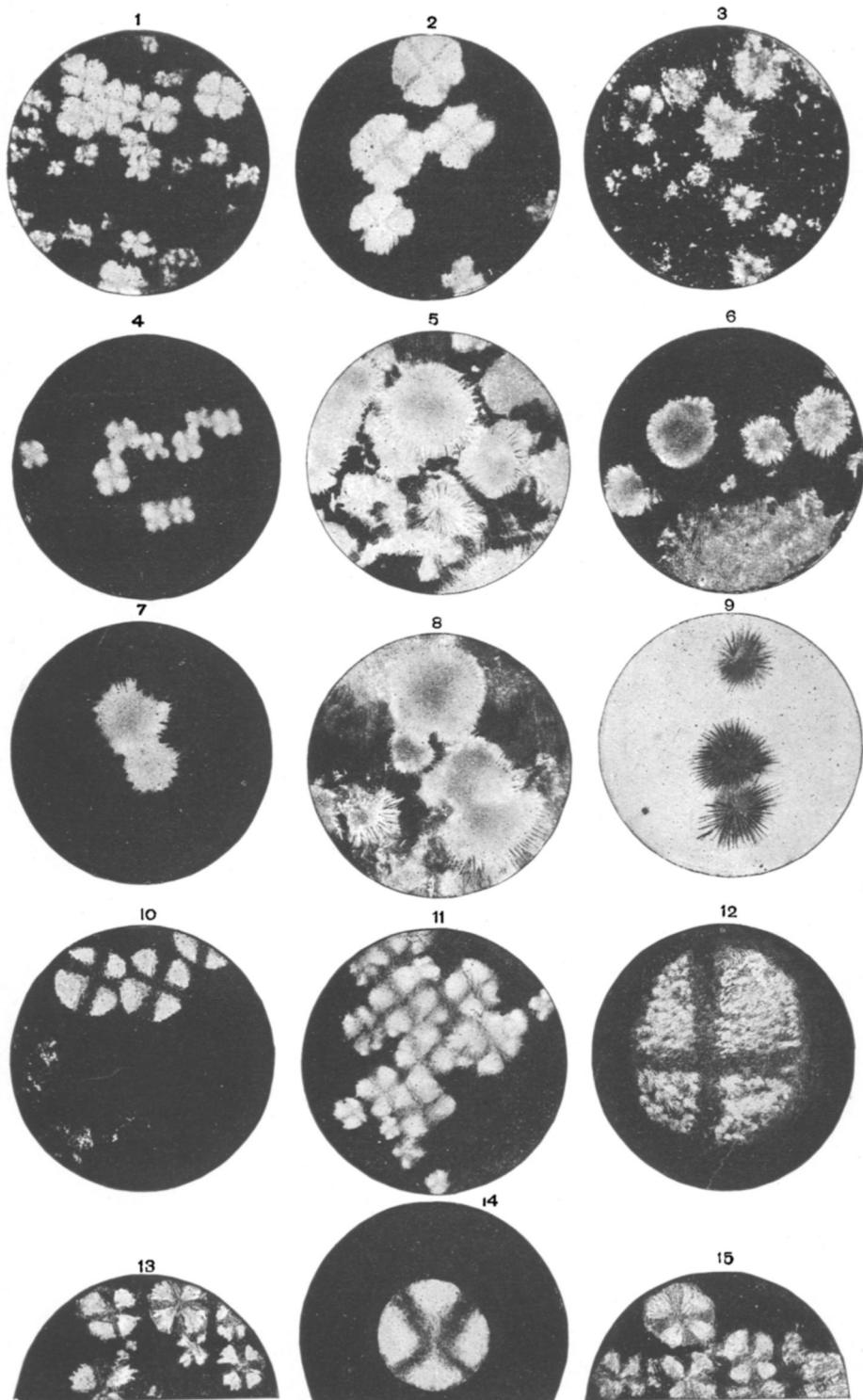
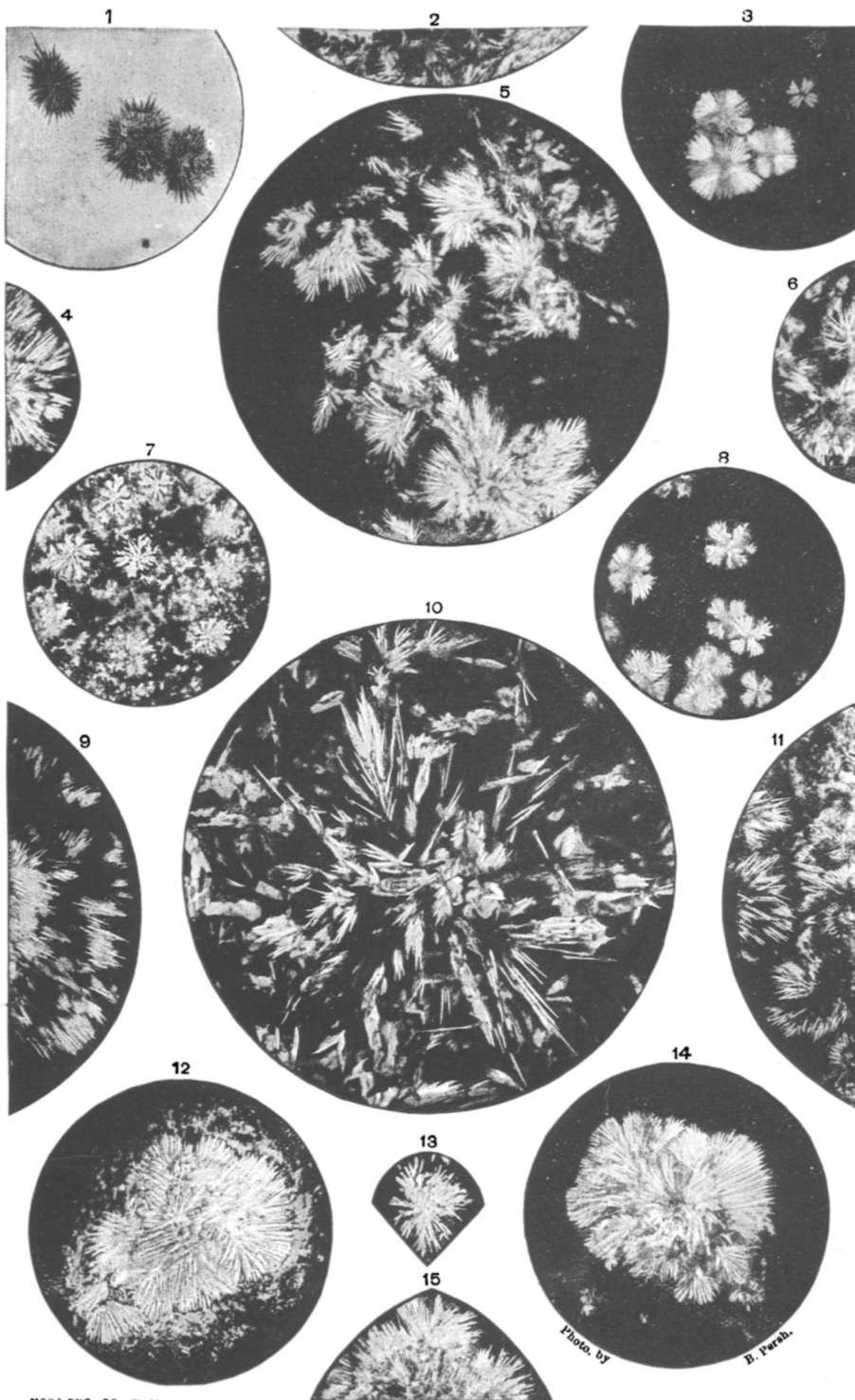
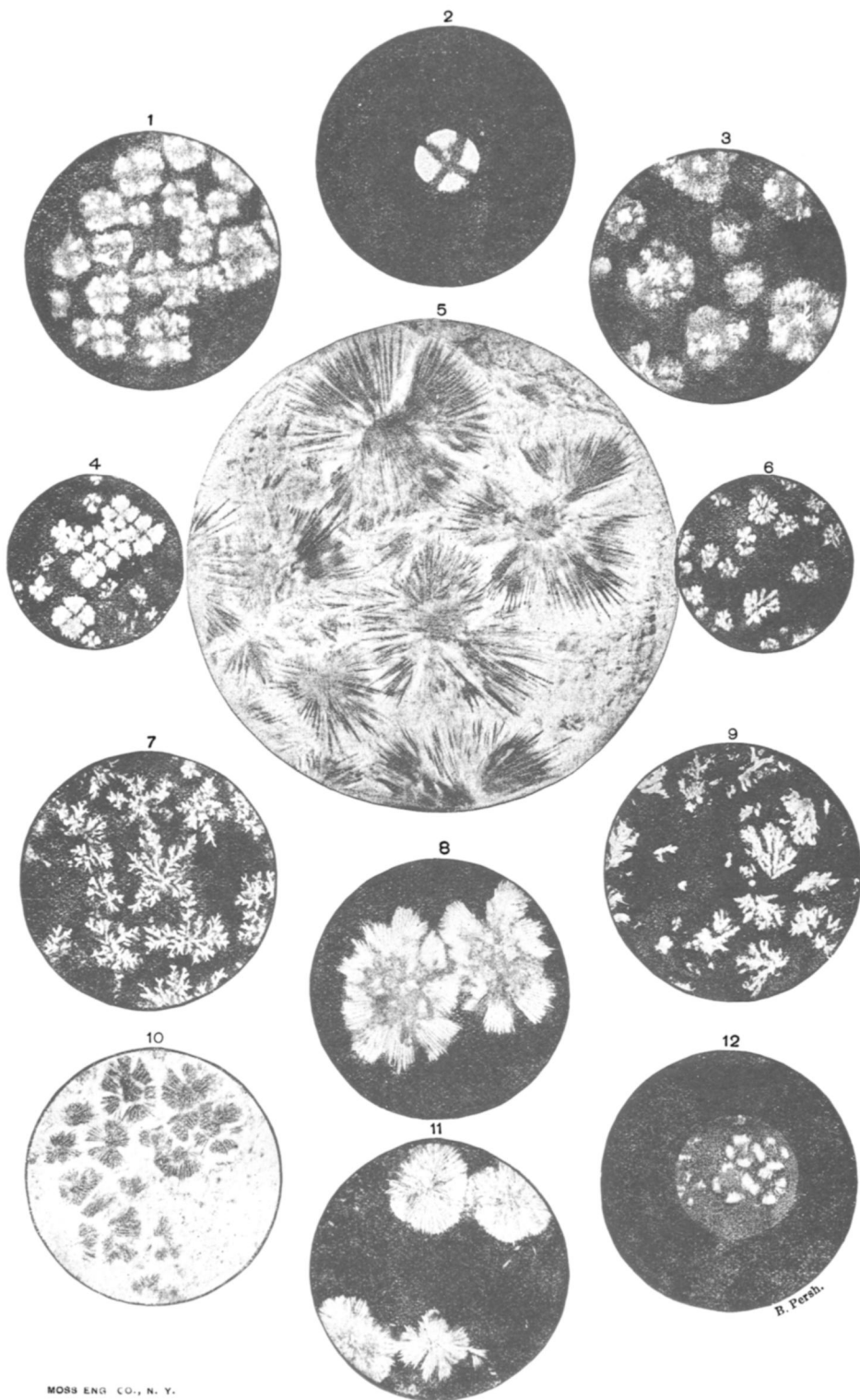


PLATE V.

CRYSTALLINE FORMATIONS OF "OLEO" & OLEOMARGINE. BOILED AND RAW.



CRYSTALLINE FORMATIONS OF LARD AND OTHER FATS.



B. Perah.

PLATE VI.

CRYSTALLINE FORMATIONS OF VARIOUS FATS.

- FIGS. 1 and 3. Respectively, primary and secondary crystals of loon fat. $\times 110$.
- FIGS. 2 and 8. Primary and secondary crystals of musk-rat fat. The primary (No. 2) are always very small, measuring about three one-thousandths of an inch in diameter.
- FIG. 4. Crystals of oleo. $\times 140$ diameters. (Extract of beef-fat.)
- FIG. 5. Crystals of common lard by plain light. $\times 400$.
- FIG. 6. Secondary crystals of butter. $\times 110$.
- FIG. 7. Crystals of beef fat. $\times 140$.
- FIG. 9. Crystals of deer fat. $\times 140$.
- FIG. 10. Lard by plain light. $\times 140$.
- FIG. 11. Crystals of the solid fat of cottonseed oil. $\times 110$.
- FIG. 12. Neutral lard crystals, immature. $\times 140$.